

SIGIR INSPECTIONS

This quarter, SIGIR Inspections continued its mission to protect the interests of U.S. taxpayers and the people of Iraq. SIGIR inspectors and engineers conducted assessments of relief and reconstruction projects throughout Iraq to determine if they have been adequately planned and constructed.

SIGIR assessed a number of high-quality projects. These projects tended to have good quality control (QC) and quality assurance programs (QA) in place. Some sectors showed marked improvement. Nevertheless, SIGIR found that contractor performance continues to be a problem. Contractor quality control (QC) plans and U.S. government quality assurance (QA) programs at several sites were inadequate. Some projects lacked adequate designs, and some lacked adequate oversight.

The visibility of SIGIR's inspections across Iraq continues to have a positive impact on reconstruction. The contracting community has learned that any project may be the target of a SIGIR on-site project assessment—with limited advance notice. SIGIR has completed 56 project assessments, 96 limited on-site inspections, and 172 aerial assessments, increasing government oversight of relief and reconstruction projects.

Project Assessments: Findings at a Glance

Oil Infrastructure Canal Crossings and Pipeline Construction (\$86.9 million)

- The project will not meet objectives.
- The U.S. government's processes to independently verify project completeness and

quality were ineffective.

- Contractor QC was inadequate.
- U.S. government QA was inadequate.
- Oil leakage from decaying pipelines presents potential safety issues.

Umm Qasr Water Scheme (\$15.6 million)

- The original objectives and the de-scoped objectives will not be met.
- Maintenance issues with the Ministry of Water Resources have not been resolved.
- Contractor QC and government QA programs were adequate.

Basrah International Airport—Tower and Terminal Rehabilitation (\$4.92 million)

- The water treatment facility is not operational, but other objectives have been met.
- The design was sufficient.
- Contractor QC and government QA programs were adequate.

Basrah International Airport—Air Side Power Supply (\$27.8 million)

- Design reports were sufficient.
- Contractor QC and government QA programs were adequate.

Police Station—Safwan Iraqi Highway Patrol 404 (\$2.5 million)

- A structural analysis of the facility is required to ensure that the design of load-bearing walls is adequate to support the structure.
- This project should meet its objectives.

Nasiriyah Fire Station (\$0.5 million)

- The project design was not complete and lacked sufficient detail.
- Contractor QC and government QA were adequate.
- This project met its objectives.

Nasiriyah Prison Facility (\$49.1 million)

- Contractor QC and government QA were adequate.
- Design was sufficient.

Muthanna Village Roads—Segment 4 (\$2.9 million)

- The project design was not complete and lacked sufficient detail.
- Contractor QC and government QA were adequate.

609 Iraqi National Guard Battalion Garrison (\$10.7 million)

- The design was sufficient.
- Contractor QC and government QA were adequate.
- This project met its objectives.

Baghdad Railway Station (\$5.9 million)

- Design was sufficient.
- Contractor QC and government QA were adequate.
- This project met its objectives.

Limited On-site Inspections**12 New Border Forts**

- SIGIR is concerned about the quality of the concrete.
- Some border forts lacked retaining walls.
- 11 of 12 lacked perimeter security.
- Roads were difficult to access in rain and snow.
- The quantity of water is insufficient for operational requirements.
- There are numerous cracks in interior and exterior walls from foundation settling.

9 MNSTC-I Border Posts

- No documentation is available on the contracts, statements of work, or designs.
- Eight of the nine projects show no signs of recent maintenance.
- Renovation was of poor quality in all nine border posts.
- Septic tanks were full, overflowing, or not operational.
- The quantity of water is insufficient for operational requirements.

4 Medical Facilities

- Three of the four projects had no significant deficiencies.
- The remaining project was of poor quality, with water leaks and damage, peeling paint, and low-quality doors and locks.

1 Electrical Project

- SIGIR found no significant deficiencies.

13 Public Safety Projects

- SIGIR found many electrical, plumbing, and finishing deficiencies.

2 Transportation Projects

- SIGIR found no significant deficiencies.

Approach to Assessment

During this quarter, SIGIR teams assessed 12 project sites, summarized in Table 3-3. The teams gathered contractual specifications, traveled to the project sites, examined on-site progress, and reviewed their findings with reconstruction managers. Each assessment team comprised an engineer and an auditor.

While the assessment teams were conducting project assessments and summarizing the results of limited ground project surveys, other SIGIR personnel were conducting preliminary assessments of 41 additional construction projects. SIGIR shares this information with project management staff to select projects for more in-depth assessments.

During the second quarter of 2005, SIGIR established a satellite imagery operation to conduct analyses using satellite imagery on projects that are remote or inaccessible because of security concerns. This operation also assists the project assessment teams with preliminary research of site progress. SIGIR continued to expand its satellite imagery operation this quarter and has been working with the National Geospatial-Intelligence Agency (NGA) to produce imagery products and assessments. This quarter, SIGIR created 33 imagery products and provided 14 imagery assessments, and NGA has produced 27 imagery assessments for SIGIR.

Planning

SIGIR selected a cross-section from each of the major reconstruction sectors to assess, survey, and analyze:

- projects involving water, electricity, oil facilities, and transportation
- projects involving large and small contract amounts
- projects of different general contractors
- projects in different sections of the country
- projects in programs of each of the major U.S. agencies
- projects that were fully completed and partly completed
- construction and non-construction projects

On-site Project Assessment Program Approach

SIGIR Inspections has completed 56 project assessments, including 13 during this quarter. These have been the general objectives of the project assessments:

- Were project components adequately designed before construction or installation?
- Did construction or rehabilitation adequately meet the standards of the design?
- Were the contractor's QC plan and the U.S. government's QA program adequately carried out?
- Were project sustainability and operational effectiveness adequately addressed?
- Were project results consistent with the original objective?

Table 3-3 lists project assessments completed this quarter. Table 3-4 lists project assessments completed in previous quarters. Figure

Aerial view of Zegeton Canal Crossing (with old pipelines visible)



3-1 shows the approximate location of each project.

SIGIR Project Assessments Kirkuk to Baiji Pipeline Project and the Kirkuk Oil Pipeline Canal Crossings 2 and 3, at Riyadh and Zegeton, Iraq

SIGIR PA-06-063

SIGIR PA-05-013

SIGIR PA-05-014

SIGIR performed an assessment of the oil sector projects associated with the construction of the new 40-inch pipeline from Kirkuk to Baiji, focusing on the past work administered by the U.S. Army Corps of Engineers (USACE) in 2003 and continuing into June 2006. The SIGIR assessment reviewed the program, project, and contract documentation back to 2003; interviewed key personnel involved in the planning, design, and construction of the pipeline; and assessed three critical canal crossings. These efforts provided an accurate three-year historical

account of the oil sector projects and decisions made by the United States and Iraqi government entities that impacted the completion of the pipeline from Kirkuk to Baiji.

The project to remove and install new pipe for the 50-km replacement of the 40-inch Kirkuk-to-Baiji³¹¹ pipeline had two objectives:

1. Increase the oil flow rate from approximately 500,000 to approximately 800,000 barrels per day—an increase of 300,000 barrels per day. When the decision to replace the pipeline was made in 2003, the 40-inch pipeline was approximately 15 years old—the end of its design life. Three critical canal crossings were included with the 50-km pipeline: the Kirkuk Irrigation Canal, Riyadh Canal, and Zegeton Canal.
2. Eliminate oil leaks from the pipeline—a major environmental concern, particularly for the local communities surrounding the pipeline.



Aerial view of oil leakage along the existing Kirkuk-to-Baiji Pipeline

The entire 50-km pipeline project, including the three canal crossings, was originally set to be completed by March 31, 2004. USACE Southwestern Division (USACE-SWD) issued Task Order 006 to Kellogg, Brown and Root (KBR) for design, construction, and quality management services in the construction of the pipeline. At the request of the Ministry of Oil, the scope of the task order included using horizontal directional drilling (HDD) methods for the three canal crossings. The task order also required KBR to use HDD to construct pipelines under the Tigris River at Al Fatah. For most of the 50-km pipeline, USACE-SWD allowed the Iraq State Company for Oil Projects³¹² (SCOP) to construct the pipeline. The Coalition Provisional Authority and the

Ministry of Oil wanted SCOP to construct the pipeline project as part of their strategy “to help the Iraqis fix their own infrastructure, not to do it for them,” according to a GRD Project Contracting Office (PCO) official. Task Order 006 also required KBR to provide technical and QC support to SCOP during the construction of the pipeline.

USACE-SWD asked KBR to complete the HDD project at Al Fatah before starting work on the three pipeline canal crossings. This decision expanded the period of performance from 4 months to 12 months.

In June 2004, USACE-SWD eliminated KBR's limited responsibility for oversight of SCOP's construction work on the 40-inch pipeline and reallocated money to other require-



Welded pipe string at the Zegeton Canal

ments of Task Order 0006. As a result, the U.S. government has no reliable data on the quantity and quality of the overall pipeline project.

In August 2004, USACE-SWD terminated the entire KBR task order because the \$75.7 million allocated for the Al Fatah HDD River Crossing project was exhausted with only 28% of the drilling complete. In November 2004, PCO awarded the completion of the river crossings at Al Fatah and the three canal crossings to Parsons Iraq Joint Venture (PIJV). The three canal crossings were scheduled to be completed by November 2005 under this contract. However, the Kirkuk Irrigation Canal Crossing was not completed until April 2006, and the Riyadh and Zegeton Canal Crossings have yet to be completed.

SIGIR found no reasonable assurance that project construction for the Riyadh and Zegeton Canal Crossings will meet the standards of the design because the contractor's QC plan

and the U.S. government's QA program have not been effective. As a result, conformity with the design standards and overall construction quality and completion have not been properly validated. Also, the status of both sites is reported differently by the PCO oil sector and the USACE Resident Management System. The PCO oil sector believes that the sites are 80% complete, and the Resident Management System lists the Riyadh Crossing at 40% complete and the Zegeton Crossing at 38% complete. However, personnel from the USACE Kirkuk Area Office who visited Zegeton in June 2006 estimated that the crossing was only about 10% complete.

According to PCO oil officials, although the previous four subcontractors have been unsuccessful in completing the remaining two canal crossings, PIJV has identified a fifth subcontractor, from the Republic of Georgia, that is willing to complete the projects. PIJV sent a

proposal to PCO oil sector officials stating that the firm will do the work if coalition forces provide security. A PCO oil official recently stated that a limited Notice to Proceed was given to the Georgian firm to begin mobilization to the site. PIJV, PCO oil, and the USACE Kirkuk Area Office are optimistic that this contractor will be able to complete both canal crossings by September 2006.

On June 1, 2004, the U.S. government eliminated KBR's responsibility for quality management of SCOP's construction work. As a result, little is known about the quantity and quality of the non-canal crossing portion of the 50-km pipeline. According to Iraq Reconstruction Management Office (IRMO) officials, Iraq's Northern Oil Company (the end user and operator of the pipeline) believes that the remaining portion of the pipeline is complete and operational. This has not been validated, but a PCO oil document indicated that the Northern Oil Company has identified at least 14 defects in the pipeline that require repair. The entire completed pipeline must also undergo these tests:

- flushing out rubbish from the pipe
- filling the line with water
- pressurizing the line
- identifying, digging out, and repairing any faulty welds

According to a PCO oil representative, the Northern Oil Company will be required to perform substantial work before the pipeline becomes operational.

Construction delays with the canal cross-

ings and pipeline resulted in the loss of approximately \$14.8 billion³¹³ of potential revenue for the Iraqi government because the increased capacity for moving oil was unavailable. Cash resources from oil revenue are essential to improve and stimulate the Iraqi economy in the short term while enhancing the potential long-term stability of the Iraqi government. These projects are critical to repair the oil infrastructure and to reestablish continuous pipeline operations.

Management Comments

GRD-PCO did not agree with all of the draft report conclusions, suggesting significant editing of the report to "accurately represent the effectiveness and efficiency of the execution of the three canal crossing projects being performed by PIJV, GRD-PCO, and USACE." However, GRD-PCO did concur with the report's recommendations.

SIGIR believes that the report presented an accurate picture of the execution of the entire 50-km pipeline, including the three canal crossings. The GRD-PCO comments, while lengthy, did not adequately address the significant issues raised in the draft report. For example, GRD-PCO did not explain the reason for the discrepancy in reporting—between the PCO oil, USACE Resident Management System, and USACE Kirkuk Area Office—on the completion percentage for the Zegeton and Riyadh Canal Crossings.

In the final report, SIGIR responds in detail to each GRD-PCO comment to reinforce the findings in the report. SIGIR will work with the



Exterior view of the terminal building

GRD-PCO representatives to resolve areas of dispute. However, it remains indisputable that the original completion date, March 31, 2004, for the entire 50-km pipeline project, including the three canal crossings, has not been met. As of July 2006, the pipeline is still not complete.

Basrah International Airport Terminal and Tower Renovation Basrah, Iraq

SIGIR-PA-06-049

The Basrah International Airport Terminal and Tower Renovation project is funded at \$5,044,988 to renovate facilities at the Basrah International Airport (BIA). One of Iraq's three major airports, BIA was originally designed to handle three million passengers per year. Although completed in 1987, the airport has never been fully operational. Because of wars, sanctions, and embargos, the facilities have suffered from neglect, looting, and a gen-

eral lack of maintenance. Before the project, BIA was reportedly below the health and safety standards for the traveling public, as well as for airport operations personnel.

The project scope of work included renovating the air-traffic control tower, fire station, plant facility, and main passenger terminal. Renovation activities included cleaning and painting; repairing water and sewer lines; repairing elevators and escalators; replacing electric lights; and replacing and repairing heating, ventilation, and air-conditioning units (HVAC). The objective was to bring facilities to an acceptable level of comfort, safety, and functionality.

What We Found

SIGIR concluded that the contract work was completed and was consistent with contract requirements although the original objectives had not been achieved at the time of the



Renovated baggage claim area

site assessment. The water treatment facility, which generates the required processed water for the HVAC systems and potable water for the airport, was not operational at the time of the assessment. The water treatment plant, renovated through a USAID project in 2003, had many equipment and operations issues. Upgrading the water treatment system was not included in the Basrah Tower Renovation project. Although USACE identified that “poor quality processed water places \$2.5 million of chiller work in jeopardy” in an Airport Status Meeting presentation on April 10, 2005, there was no budgeted project to repair the water

treatment facility at the time of the assessment.

SIGIR recommended that GRD-PCO and IRMO develop a comprehensive, coordinated effort, including scope and funding requirements and funding requests. The effort should ensure that BIA has a functioning water treatment facility to provide potable water for the passenger terminal and processed water for the HVAC systems.

GRD-PCO did not agree with our conclusion and recommendation. They agreed that the operation of the water treatment plant is a valid observation, but that it should be discussed as a separate issue from the assessment



Ticket-counter renovation

of the terminal renovation. IRMO agreed that a properly operating water treatment plant is required to support equipment repairs and to make the buildings habitable at BIA (rest-room, HVAC, water, and health). Solicitation for the repair of the water treatment plant was completed in 2005; however, funding was reallocated from IRMO Transportation (Aviation). Currently, IRMO has a usable scope of work, but it must identify at least \$3.5 million in funding to repair the water treatment plant. Water plant repairs are an IRMO transportation priority in FY 2007 if funding becomes available. IRMO agreed that the issue is quite critical because the use of untreated water in the chillers will damage sensitive equipment.



Three pairs of cooling towers for HVAC system of main passenger terminal



Exterior view of IHP barracks buildings

Police Station–Safwan IHP-404 Basrah Governorate, Iraq

SIGIR-PA-06-051

The Safwan Iraqi Highway Patrol (IHP)-404 project was designed to construct an operational facility for Iraqi Highway Patrol administrative functions and barracks in the Basrah governorate. The project is funded with \$2,550,841. Part of the Ministry of Interior, IHP is projected to employ approximately 6,300 personnel to carry out its mission of providing law enforcement and security along the highways and major roadways of Iraq.

The contract scope of work required the new construction of two barracks facilities; perimeter walls, lighting, and guard towers; force protection for vehicle search area; fuel

point; water well with filtration and water distribution network; sidewalks and roads; and covered and uncovered parking areas.

What We Found

All of the work that SIGIR observed was consistent with contract requirements. The objectives of the project were met, and the USACE QA program ensured adherence to contract, design, and specification requirements. Sustainability was addressed through the contractual requirement for the supply of manuals and on-site training for personnel on generators, the water system, and other equipment.

One area of concern is the design of the



Dining facility inside barracks

two barracks facilities. Structural reinforced concrete columns and beams are commonly used for construction to support the weight of the reinforced concrete floor and roof. The design for the IHP barracks required the structural supporting walls to be made of brick to support reinforced concrete beams and required reinforced concrete floor and roof slabs for the two-story structures. Specifications for the required properties (compression strength) of the bricks were not included in the design submittals. USACE-Gulf Region South (GRS) did not request or review a structural-



Light poles, perimeter walls, and covered parking area

design analysis as part of the design submittal and approval process. Therefore, SIGIR could not determine if the use of brick instead of reinforced concrete columns will adequately support the two barracks facilities.

SIGIR recommended that USACE-GRS district, area, and resident offices ensure that a design analysis of the facilities is completed. USACE-GRD concurred with the recommendation and completed a structural analysis of the facility.

Basrah International Airport–Air Side Power Supply to NAVAIDS and VISAIDS Basrah, Iraq

SIGIR-PA-06-050

The Air Side Power Supply to Navigational Aids (NAVAIDS) and Visual Aids (VISAIDS) was a \$383,043 project at BIA. The electrical distribution systems were not operational because the systems had not been properly maintained throughout the previous regime, and the electrical systems had been damaged, looted, and cannibalized.

The objective was to define the scope and costs of future construction activities required

to provide reliable power to the medium-voltage (MV) electrical network, special equipment to be installed during upcoming aviation projects, and other critical aviation infrastructure at BIA. In addition, the stated intent of this project is to test, assess, and perform engineering and cost analysis of the 33-kilovolt (kV) and 11-kV distribution network at BIA to provide reliable power to aviation facilities for certification by the International Civil Aviation Organization.

This project was for assessment and design services and did not include a construction component.



Missing electronic equipment at runway substation

What We Found

The review of the interim, draft, and final preliminary design reports show that they are consistent with the contract requirements. The preliminary design reports, associated photos, test data, and schematics appear detailed and specific enough to guide future contracting actions and to meet the stated objectives. No recommendations were included in the project assessment report, and USACE concurred with SIGIR's findings.

Umm Qasr Water Scheme Basrah Governorate, Iraq

SIGIR-PA-05-028

The Umm Qasr Water Scheme project in southeast Iraq was funded with \$15,247,831. Also referred to as the Sweetwater Canal, the 238-km system transports water from south of the city of Kut to the city of Basrah, where the water source has elevated total dissolved solid

salt levels. The canal system has sections of concrete-lined and unlined open channels, pumping stations, and crossing points.

The contract scope of work (SOW) was intended to:

- provide immediate repairs to the Sweetwater Canal
- provide permanent power supply to Pump Station #2
- develop the capability of local ministry staff to take responsibility for canal maintenance
- develop and implement part of the intermediate-term solution (ten years) for the canal
- make maximum use of contractors, suppliers, craftsmen, and laborers in the areas where the work is executed

What We Found

Because of substantial de-scoping of the project, the permanent power supply to Pump Station #2 was not completed (design only), and the implementation of the intermediate solution was de-scoped to a geotechnical survey of the 20-km section of deteriorated canal. In addition, although substantial equipment and training was supplied to Ministry of Water Resources personnel, SIGIR observed no evidence of maintenance activities. The original objectives and the de-scoped objectives do not appear to have been met. The design submissions appeared adequate to guide the limited construction activities completed through this contract and the future installation of a permanent power supply.



General location map of the Sweetwater Canal

All work observed appeared to be consistent with the intent of the project. The field work portion of this project was completed before the site assessment; therefore, verification of the emergency repairs of the canal was based on QC reports and photo logs. Although the canal shows signs of continued deterioration, this could be attributed to the lack of ongoing maintenance. Overall, the QA program was adequate.

The Ministry of Water Resources received heavy equipment, and the contractor provided training on emergency repair procedures for canal heavy equipment, Nissan Bus W41, generators, and fuel tanker trucks. The heavy equipment and training received by the Ministry of Water Resources enabled it to perform emergency repairs and routine maintenance on the canal.

During the site visit, the SIGIR assessment team did not see any routine maintenance being performed or any evidence of emer-



Pump Station #2, Umm Qasr Canal

gency repairs. A principal part of the contract was to perform capacity building to ensure that the Ministry of Water Resources had the equipment and training necessary to perform ongoing maintenance of the canal. Although substantial equipment and training were supplied, it was not apparent that maintenance activities were being accomplished.

SIGIR recommended that IRMO determine which Iraqi ministry is currently responsible for maintaining the Umm Qasr Water Canal and inquire why the equipment provided for maintaining the canal is not being used for its intended purpose. USACE generally concurs with the conclusions of this report; nevertheless, it stated that the canal failures were

significantly reduced, allowing for continuous operation at flow rates above five cubic meters per second, up from one to two meters per second. USACE noted that an alternative water scheme had been suggested as a replacement for the Umm Qasr Canal.

IRMO reiterated the USACE comments about the increase in flow produced, commenting:

In addition, installation of a permanent power supply for Pump Station #2, although deleted from the contract SIGIR assessed, will be completed under a separate task order. Approximately \$4.2 million in heavy equipment was purchased for the Ministry, and training on emergency repair procedures was conducted in



Water flowing out of all three pipelines from Pump Station #2 into the Umm Qasr Canal



Example of under-cutting of canal

September 2005. Additional training on maintenance and use of the heavy equipment was conducted under the same contract from January 2006 to June 2006. Although continued improvements in the Ministry capability are required, the objective to improve the Ministry's capabilities has been substantially achieved. The Ministry has taken other steps to increase its capabilities to perform routine maintenance on the canal, including establishment of an office that is responsible for the daily O&M [operations and

maintenance] of the canal. The Ministry is also accumulating clay material for repairs at the deteriorated section of the canal. The Ministry has demonstrated its readiness to perform both routine maintenance and emergency repairs on the canal. In December 2005, the Ministry successfully completed an emergency repair of a canal breach, where its staff that had been trained by the U.S. government participated in these repairs while using equipment provided by the U.S. government. The Ministry is currently

removing accumulated sediments at the storage area at the downstream end of the canal in order to provide emergency supply of raw water (3-5 days supply to Basrah).

IRMO also recommended and SIGIR concurred that, as part of its field work, a meeting should be conducted with representatives of the relevant ministries to discuss these types of issues directly with the responsible authorities.

Nasiriyah Fire Station Thi-Qar Governorate, Iraq

SIGIR PA-06-053

The objective of the Nasiriyah Fire Station project was to construct a fire station in the city of Nasiriyah to accommodate 20 firefighters and 11 daytime administrative staff members for the Iraq Civil Defense Directorate. USACE-GRD executed a firm fixed-price contract for \$508,800 to design and construct the fire station. At the time of the SIGIR assessment, the project was essentially complete: only punch-list items remained.



Exterior view of the front of the fire station (photo provided by USACE)

What We Found

The SOW required the contractor to design and build the fire station based on floor-plan layouts provided by USACE-GRS. However, the contractor's design was not complete and lacked sufficient detail. In addition, the SIGIR assessment team did not find any record of the design review and approval by GRD-PCO or USACE-GRS.

Despite the insufficient design and review process, the government QA program effectively monitored the contractor's QC program and construction of the fire station. A government QA deficiency log was successfully maintained to monitor the construction process. During the early phases of construction, deficiencies were noted in the concrete work. The GRS Contracting Officer issued a stop-work order, and the contractor made the necessary corrections.

During the project, the USACE QA representative and project engineer ensured that potential construction deficiencies were detected, evaluated, and properly corrected in a timely manner. The management program effectively ensured that the project results were consistent with the original contract objective.

SIGIR recommended that on future projects, USACE-GRD should ensure the adequacy of the design and maintain a record of the design review and approval process. USACE-GRD concurred with the recommendation.

Sustainability

Sustainability was addressed in the contract requirements. The contract statement of work required the contractor to provide and certify warranties in the name of the appropriate ministry for all equipment, including any mechanical, electrical and electronic devices, and all operations for 12 months after issuance of the Taking-Over Certificate. The contractor also provided an operations and maintenance manual for the building's 50-kV-amp (kVA) electrical generator.

Nasiriyah Prison Thi-Qar Governorate, Iraq

SIGIR PA-06-054

The objective of the project was to increase the number of beds in the Iraqi Corrections Service for the Ministry of Justice by building a new prison. The specific objective included the design and construction of a new maximum/minimum security prison facility for up to 4,400 inmates in southeastern Iraq, complete with all furniture, fixtures, equipment, and buildings required for sustained operation.

Task Order 008 of Contract W914NS-04-D-0009 was issued to Parsons Global Services, Inc., on May 11, 2004, to design and build the prison. Subsequent de-scoping caused by cost constraints reduced the holding capacity to an 800-bed prison that could be expanded by another 400 beds.

The prison site is located in the Thi-Qar governorate, approximately 10 km southwest of the City of Nasiriyah in a sparsely populated area. Utilities were not available to the prison

site; therefore, the SOW included designing and building an on-site plant to generate electricity, a water treatment plant, and a package wastewater treatment facility.



Prison perimeter wall, interior fencing, and guard towers at the Nasiriyah Prison

What We Found

When SIGIR inspected the project site on April 10, 2006, the GRD-PCO database listed a start date of November 2, 2004, and a completion date of August 30, 2006. At the time of the assessment, the project was only 28% complete, although the construction of the perimeter wall, guard towers, and security fencing internal to the perimeter wall was substantially complete.



Kitchen and laundry building structural frame



One of the prison inmate housing units under construction

All project buildings and facilities were adequately designed before constructing the prison in accordance with the contract's scope of work. Further, the plans and specifications provided an accurate depiction and adaptation of the design to site conditions. Also, the design considered architectural compatibility of the prison facilities and future plans for prison expansion.

The government QA program effectively monitored the contractor's QC program. The USACE QA representative also supplemented the daily reports with detailed photographs that reinforced the narrative information provided in the reports. The contractor's QC plan was sufficiently detailed to effectively guide the contractor's quality management

(QM) program. Further, the contractor's daily QC reports contained the required project and work activity information to document construction progress and identify problems and required corrective actions. The contractor also maintained nonconformance reports to document problems noted with construction and renovation activities.

All of the construction work associated with the prison met the standards of the design. The Nasiriyah Prison design and construction workmanship to date were consistent with the task order requirements. The USACE project engineer took a very active role in managing the project to ensure quality and compliance with the task order SOW requirements.

Contracting Actions Subsequent to the SIGIR Assessment

The Joint Contracting Command-Iraq/Afghanistan (JCC-I/A) issued a Show Cause letter to Parsons Global Services, Inc., on June 16, 2006 for lack of construction progress, schedule adherence, and cost control. Subsequent to the Show Cause letter, JCC-I/A announced on July 12, 2006, that it was terminating the contract with Parsons Global Services, Inc., for the Nasiriyah Prison. Their decision was based on the contractor's failure to achieve critical completion dates resulting in an unaffordable increased cost. Construction delays during the course of the project resulted in a 410-day schedule slippage and a projected cost overrun of \$23 million.

Construction on the prison will continue via a bridge-contract awarded by JCC-I/A directly to the onsite Iraqi firm doing the majority of construction for Parsons Global Services, Inc.

Muthanna Village Roads Segment 4 Governorate of Muthanna, Iraq

SIGIR PA-06-055

The objective of the Segment 4 project was to construct 34 kilometers of paved village roads north of Samawah in the northern part of the Muthanna governorate. This project location was on an Iraqi State Commission on Roads and Bridges (SCRB) list of prioritized unpaved roads requiring upgrade because of the needs of local farmers who were experiencing difficulty transporting their crops to Samawah.

The 365-day project was originally contracted at \$2,888,268. At the time of the SIGIR assessment, the project was approximately 50% complete, but the contractor was almost five months past the original completion date of the project. Security conditions prevented the assessment team from visiting the project site and observing any on-site construction.

What We Found

Based on the SIGIR assessment team's review of the contract file and interviews with USACE-GRS area and resident office personnel, the construction appeared to be consistent with the intent of the project. The government QA program was effective in monitoring the contractor's QC program. The contractor's



Construction of a box culvert (photo provided by USACE)

QC plan was sufficiently detailed, although the contractor did not submit QC reports or maintain deficiency logs to document problems noted with construction and renovation activities.

Information about the design did not appear to be flowing properly between the Muthanna Resident Engineer and the GRD-PCO Facilities and Transportation Sector. The design provided to the Muthanna Resident Engineer lacked details about box culverts constructed with reinforced concrete, and the Resident Engineer was not given centerline and profile drawings for the project length.

SIGIR recommended that on current and future village road projects, GRD-PCO should provide field offices with the appropriate centerline and profile drawings prepared by SCRB and detailed drawings of standard or project-specific reinforced concrete box culverts. GRD-PCO concurred with the recommendation.

Notwithstanding the contractor's schedule delays, if the GRD Muthanna Resident Office continues the current level of oversight, the completed project should meet the original contract objectives and provide the local population with 34 kilometers of paved, two-lane roads.

609th Iraqi National Guard Battalion Garrison Thi-Qar Governorate, Iraq

SIGIR PA-06-056

The objective of this project was to construct a garrison for the 609th Iraqi National Guard Battalion in the Thi-Qar governorate. The

garrison, one of three similarly constructed battalion garrisons in southern Iraq, will help the Iraqi security forces defend against internal and external security threats. At the time of the SIGIR assessment, the garrison was essentially complete, except for punch-list items and pending modification work. The contractor was issued a firm fixed-price task order for \$9,665,485 to construct this garrison.

What We Found

SIGIR's assessment team reviewed the design for the 609th Iraqi National Guard Battalion garrison and determined that the project components were adequately designed before construction. The garrison complex features perimeter security protection, water and sanitation facilities, and an electric generator system. Specific building requirements for the garrison construction included enlisted and officer barracks, company offices, a dining facility for officers and enlisted personnel, an administration building, laundries, a mosque, a medical center, an armory, and a vehicle maintenance and logistics center.

The assessment team concluded that the project was capably managed by the USACE Thi-Qar Resident Office. The project's quality management effectively ensured the construction of the garrison. Although the utility drawings were not updated at construction to reflect the most current requirements, the contractor built most of the garrison facilities using the original set of design drawings and specifications.



609th Iraqi National Guard garrison facilities

The 609th Iraqi National Guard Battalion garrison project results were consistent with the original task order objectives. The completed project work resulted in a fully functional garrison for the Iraqi military, with additional garrison facilities for up to 850 soldiers.

Sustainability

Sustainability was addressed in the contract specifications. The contract specifications required O&M training for all systems furnished under the contract, provided by the system manufacturer. The contract also included the normal one-year warranty on individual items, equipment, and systems.



Two sets of booster pumps for circulating potable water throughout the garrison

Baghdad Railway Station Rehabilitation Baghdad, Iraq

SIGIR PA-06-057

The objective of the project was to rehabilitate the Baghdad Railway Station to restore the sanitary system and other utility systems for health, safety, operations, and public convenience. Constructed more than 50 years ago, the Baghdad Railway Station is the principal station for all rail service in Iraq. It also houses offices of the Ministry of Transportation and the Iraq Republic Railway (IRR). All train movements (passenger and freight) and all administrative functions of the national system are monitored, controlled, and coordinated from the Baghdad Railway Station.

The Baghdad Railway Station was constructed between 1948 and 1953. The H-

shaped station building features a main entrance, which opens into a central rotunda with four interconnecting wings. The station was not significantly damaged during Operation Iraqi Freedom; however, it suffered from years of neglect, deferred maintenance, vandalism, and looting—particularly in the last 30 years, when the former regime diverted funds to other priorities. Consequently, the station, while structurally sound, required significant rehabilitation:

- Pipes in the walls, ceilings, and under the floors had ruptured or leaked, causing serious interior water damage.
- Most of the bathroom fixtures were vandalized or looted, and what remained did not function properly.
- The pumps for pumping sewage into the

Baghdad Railway
Station (photo
provided by USACE)





View of interior partitions before refurbishment (photo courtesy of USACE)



View of new interior partitions

municipal collection system did not function. As a result, raw sewage had backed up through most of the basement to a height of four feet, which seriously damaged building components and equipment.

- The electrical system was in disrepair, with inoperable lights, outdated distribution system panels, and temporary wiring hanging loose in public areas.
- The HVAC system was non-functional, with many critical components missing.
- The architectural components of the building exterior (roof, windows, and doors) leaked and required substantial renovation work to waterproof and restore them to their original conditions. Interior walls, floors, and ceilings needed extensive rehabilitation to restore functionality.

The cost of the rehabilitation project was approximately \$5.9 million.

What We Found

The SIGIR assessment team made three site visits to the Baghdad Railway Station. At the time of the SIGIR assessments, the project was essentially complete except for punch-list items and added work associated with a

pending modification. The assessment team concluded that all observed work met the standards of the design, although some renovated components (gardens, train platform drainage, and basement utilities) were not evaluated by SIGIR because the design was inadequate for these areas. In addition, SIGIR found that the staff at the USACE Resident Office disagreed about the submittal process and functional responsibilities for review and approval. SIGIR recommended that the two entities involved with the work at the railway station meet to clarify roles and responsibilities for the submittal, review, and approval processes. GRD-PCO concurred with the recommendation.

The contractor's QC plan was sufficiently detailed to effectively guide the contractor's QC program. The contractor submitted daily QC reports, which were reviewed by the USACE Deputy Resident Engineer. The government QA program effectively monitored the contractor's QC program. The USACE Local National Quality Assurance Representative maintained daily QA reports that documented any deficiencies noted at the site. The SIGIR assessment team found the QA reports to be sufficiently complete, accurate, and timely. The QA representative did main-

tain a deficiency log, and the Deputy Resident Engineer and the QA representative ensured that deficiencies cited during QA inspections were corrected.

The project results were consistent with the original contract objectives. As a result of the renovation, IRR has work spaces that offer a much safer and healthier environment for employees and visitors. Further, the station's structures and utility systems have been modernized to basic levels to support IRR services and operations.

Sustainability

Sustainability was addressed in the contract requirements. The contract scope of work required a one-year warranty on all materials and workmanship. The contract also required lists of spare parts, preventive maintenance plans, and operations and maintenance manuals for major equipment components. Commissioning, including training, has been provided to IRR personnel on the major utility systems, including boilers, chillers, and generators.

THE 12 PROJECTS ASSESSED THIS QUARTER (DOLLARS IN THOUSANDS)

PCO ID	PROJECT NAME	GOVERNORATE	BUDGETED TOTAL COST	EXECUTING AGENCY	CONTRACTOR	GRD REGION
NA	Kirkuk to Baiji Pipeline*	Tameem	\$3,445**	Multiple	Multiple	North
21278	Baghdad Railway Station Rehabilitation	Baghdad	\$6,385	PCO	Foreign	Central
18169	Military Base—609th ING	Thi-Qar	\$7,634	GRD	Foreign	South
17840	Muthanna Village Roads Segment 4	Muthanna	\$2,888	PCO	Foreign	South
4514	Prison Facility—Nasiriyah	Thi-Qar	\$49,087	PCO	Parsons Global Services	South
10072	Fire Station—Nasiriyah	Thi-Qar	\$627	PCO	Foreign	South
19988	Police Station—Safwan, IHP 404	Basrah	\$2,472	PCO	Foreign	South
22060	Basrah International Airport—Air Side Supply	Basrah	\$580.5	PCO	Foreign	South
12036	Basrah International Airport—Terminal and Tower	Basrah	\$5,045	PCO	NANA Pacific	South
1438	Umm Qasr Water Supply Canal	Basrah	\$15,600	PCO	Washington International	South
19606	Riyadh Canal Crossing	Tameem	\$635.5	PCO	PIJV	North
19607	Zegeton Fatah Canal Crossing	Tameem	\$658.1	PCO	PIJV	North

* Assessment of multiple oil sector pipeline projects from Kirkuk oil fields to Baiji Refinery

** Does not include Development Fund for Iraq monies used on these pipeline projects

* Table does not include Summary Report Ground Project Surveys

TABLE 3-3

THE 42 PROJECTS ASSESSED IN OTHER QUARTERS (DOLLARS IN THOUSANDS)

PCO ID	PROJECT NAME	GOVERNORATE	BUDGETED TOTAL COST	EXECUTING AGENCY	CONTRACTOR	GRD REGION
19158	Hilla SWAT Facility	Babil	\$2,219	GRD	Foreign	South
18427	Seif Sa'ad Police Station	Babil	\$153	GRD	Foreign	South
12883	Border Post—As Sul #37, Bnawasuta-Issawa	Sulaymaniyah	\$272	GRD	Parsons Delaware	North
12787	Border Post—As Sul #29, Kuralau Bnaw-Azmik	Sulaymaniyah	\$275	GRD	Parsons Delaware	North
12840	Border Post—As Sul #20, Marwa	Sulaymaniyah	\$272	GRD	Parsons Delaware	North
12855	Border Post—As Sul #23, Bargurd-Safrah	Sulaymaniyah	\$272	GRD	Parsons Delaware	North
18638	Military Base Umm Qasr— Ammo Supply Point	Basrah	\$253	GRD	Foreign	South
21196	Operation Center and Security	Basrah	\$1,175	GRD	Foreign	South
21304	Port of Umm Qasr Security Upgrades	Basrah	\$3,747	GRD	Foreign	South
19071	Project Phoenix— Restore Qudas Gas Turbines	Baghdad	\$11,391	PCO	Fluor Amec	Central
Life Support Contract	Hilla Police Academy—CN W914NS-0-C-9046	Babil	\$9,135*	JCC-I/A	SBIG Logistics & Technical Services	South
4 DFI Contracts	Kerbala Library	Kerbala	\$1,294	CPA (South Central)	Global Business Group	South
3532	Al Wahda Water Treatment Plant	Baghdad	\$4,712	PCO	Fluor Amec	Central
3529	Al Wathba Water Treatment Plant	Baghdad	\$8,698	PCO	Fluor Amec	Central
18462	Al Nahrwan Water Supply Project	Baghdad	\$348	GRD	Foreign	South
18079	Al Sumelat Water Network	Baghdad	\$764	PCO	SIMA International	Central
1654	Al Hakamia Substation	Basrah	\$5,934	PCO	Perini Corporation	South
1657	Hamdan Substation	Basrah	\$5,001	PCO	Perini Corporation	South
1655	Al Kaffat Substation	Basrah	\$5,934	PCO	Perini Corporation	South
1656	Al Seraji Substation	Basrah	\$5,709	PCO	Perini Corporation	South
1659	Shut Al Arab Substation	Basrah	\$5,298	PCO	Perini Corporation	South
18183	Al Fatah Pipe Crossing	Tameem	\$29,715	PCO	Parson PJIV	North
18185	Kirkuk Canal Crossing	Tameem	\$2,088	PCO	Parson PJIV	North
19604	Al Fatah River Crossing Tie-ins	Tameem	\$8,156	PCO	Parson PJIV	North
19250	Al Balda Police Station	Babil	\$135	GRD	Foreign	South
13607	Hilla Maternity and Children's Hospital	Babil	\$7,414	PCO	Parsons Global Services	South
11812	Al Imam Primary Care Center	Babil	\$533	PCO	Parsons Delaware	South
21950	Babil Railway Station	Babil	\$274	PCO	Foreign	South

PCO ID	PROJECT NAME	GOVERNORATE	BUDGETED TOTAL COST	EXECUTING AGENCY	CONTRACTOR	GRD REGION
DFI	Horizontal Drilling	Tameem	\$75,500	GRD-PCO	KBR	North
12637	Mosul Airport— ATC Tower Rehab	Ninewa	\$10,329	GRD	Foreign	North
17846	Ninewa Village Roads Segment 3	Ninewa	\$920	GRD	Foreign	North
6176	Ainkawa Fire Station	Erbil	\$1,392	GRD	Parsons Global Services, Inc.	North
5623	Erbil City Transformers	Erbil	\$3,372	GRD	Washington International, Inc.	North
18922	Sheile Primary School	Dahuk	\$401	GRD	Foreign	North
19144	Zakho—Military Academy	Dahuk	\$5,591	GRD	Foreign	North
11937	PHC Type A at Shiqaq Hai Musalla	Tameem	\$608	GRD	Parsons Delaware, Inc.	North
11936	PHC Type A at Hai Alhajjaj	Tameem	\$608	GRD	Parsons Delaware, Inc.	North
11940	PHC Type A at Hai Alasra Wa Al Mafqoodeen	Tameem	\$648	GRD	Parsons Delaware, Inc.	North
11939	PHC Type A at Hai Al Wasity	Tameem	\$648	GRD	Parsons Delaware, Inc.	North
11938	PHC Type B at Hai Tis'een	Tameem	\$734	GRD	Parsons Delaware, Inc.	North
23160	New Second Brigade Base	Tameem	\$114,000	AFCEE	Environmental Chemical Corporation	North
20645	Aviation Base Building	Tameem	\$13,200	AFCEE	Environmental Chemical Corporation	North

* Table does not include PA-06-048 Summary Report Ground Project Surveys

TABLE 3-4

PROJECT ASSESSMENTS

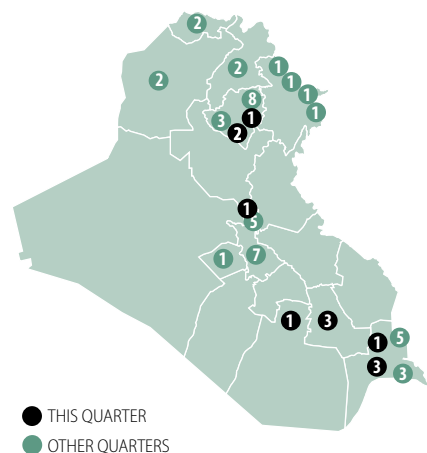


Figure 3-1
**APPROXIMATE LOCATIONS OF THE 54 PROJECTS
WHERE INSPECTIONS WERE CONDUCTED,
ANALYZED, AND REPORTED TO DATE**

Limited On-site Inspection Program (Ground Project Surveys)

The limited on-site inspection program is the second component of SIGIR's construction inspection work at specific sites. The program continues to be an important part of SIGIR's efforts to ensure the broadest possible coverage of all construction sites in Iraq.

The limited on-site inspection program involves conducting more general on-site inspections of project construction sites, noting deficiencies, assessing overall progress, and taking photographs. The information is then analyzed for contract compliance, shared with program management, and used to identify locations for more detailed engineering assessments.

Since the program began in September 2005, SIGIR has conducted limited on-site inspections of 96 projects. This section summarizes and analyzes the 41 limited on-site inspections that were completed last quarter. This is the last quarter that SIGIR is planning to complete limited on-site inspections. Personnel involved with this successful program will be conducting more comprehensive assessments in the future.

The 41 projects analyzed and reported this quarter include 21 border posts, 1 electrical substation, 4 medical facility projects, 13 public-safety projects, and 2 transportation projects in northeast Iraq and throughout southeast Iraq. Figure 3-2 shows the approximate locations of all 96 projects assessed.

LIMITED ASSESSMENTS

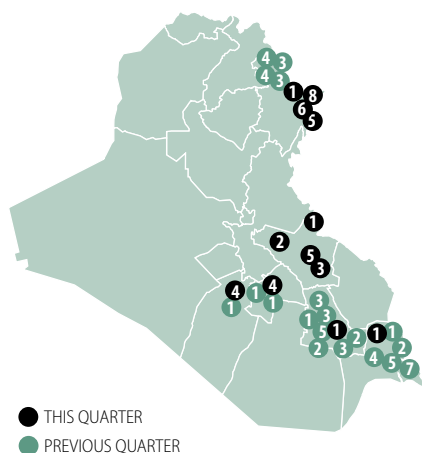


Figure 3-2
**APPROXIMATE LOCATIONS OF THE
96 PROJECTS WHERE SURVEYS WERE
CONDUCTED, ANALYZED, AND REPORTED**

THE 41 PROJECTS SURVEYED, ANALYZED, AND REPORTED THIS QUARTER

PCO Project Number	Project Name	Governorate
12827	Border Post—Sulaymaniyah #16	Sulaymaniyah
12836	Border Post—Sulaymaniyah #19	Sulaymaniyah
20570	Border Post—Sulaymaniyah #40	Sulaymaniyah
20571	Border Post—Sulaymaniyah #49	Sulaymaniyah
12831	Border Post—Sulaymaniyah #17	Sulaymaniyah
20573	Border Post—Sulaymaniyah #62	Sulaymaniyah
12835	Border Post—Sulaymaniyah #18	Sulaymaniyah
20575	Border Post—Sulaymaniyah #41	Sulaymaniyah
18362	Police Station—Al Kut HQ	Wassit
21263	Thi-Qar Railway Station Rehabilitation (Nassriyah)	Thi-Qar
19187	Police Station—Al Kut Traffic Police HQ	Wassit
19189	Police Station—Al Kut	Wassit
19181	Police Station—Checkpoint HQ Khanzarah	Wassit
19179	Police Station—Al Kut Emergency Swat	Wassit
12786	Border Post—Sulaymaniyah #06	Sulaymaniyah
20558	Border Post—Sulaymaniyah #48	Sulaymaniyah
12809	Border Post—Sulaymaniyah #32	Sulaymaniyah
12834	Border Post—Sulaymaniyah #34	Sulaymaniyah
12884	Border Post—Sulaymaniyah #26	Sulaymaniyah
19111	Police Station—Al Uropa W020	Wassit
19227	Police Station—Al Hayy HQ W015	Wassit
19779	Police Station—Qadisiyah HQ Q117	Qadissiya
20576	Border Post—Sulaymaniyah #54	Sulaymaniyah
12807	Border Post—Sulaymaniyah #12	Sulaymaniyah
20572	Border Post—Sulaymaniyah #59	Sulaymaniyah
20577	Border Post—Sulaymaniyah #61	Sulaymaniyah
16124	Najaf Teaching Hospital—Phase I Parsons	Najaf
11913	Construct clinic in Najaf—Al Uroba	Najaf
18334	Police Station—Jamhuri Q075	Qadissiya
20324	Police Station—Babail Special Missions Units Q128	Qadissiya
19117	Police Station—Attika Jail Q125	Qadissiya
19873	Najaf Teaching Hospital—GRS Portion Phase II	Najaf
10309	Maternity and Pediatric Hospital—Al-Najaf	Najaf
19175	Police Station—Al Hayferiyah W005	Wassit
12826	Border Post—Wassit #06	Wassit
19230	Police Station—Bashier W047	Wassit
17789	Basrah Village Roads	Basrah
1861	Al Hasheme Substation	Wassit
12855	Border Post—Sulaymaniyah #23	Sulaymaniyah
12850	Border Post—Sulaymaniyah #22	Sulaymaniyah
20574	Border Post—Sulaymaniyah #43	Sulaymaniyah

TABLE 3-5

THE 55 PROJECTS SURVEYED, ANALYZED, AND REPORTED PREVIOUS QUARTER

PCO PROJECT NUMBER	PROJECT NAME	GOVERNORATE
11943	Clinic in Thi-Qar at Sukkar	Thi-Qar
19220	Police Station Checkpoint—Islah Shebayish D 409	Thi-Qar
19218	Police Station Checkpoint—Suk Ash Shuyuck D408	Thi-Qar
19219	Police Station Checkpoint—Tallil Lahem D407	Thi-Qar
19990	Police Station—Suk Al Shiyook D144	Thi-Qar
10630	School #1800425, Al-Shatrah School	Thi-Qar
10613	School #1800809, Intifadha	Thi-Qar
10588	School #1800869, Al-Salam School	Thi-Qar
17867	Thi-Qar Village Roads, Segment 3 Hahin Al Dukhi (7.1 km)	Thi-Qar
11941	Clinic in Thi-Qar Al Zahra	Thi-Qar
10072	South Site Fire Station New Nasiriyah	Thi-Qar
10318	Maternity & Pediatric Hospital Al-Nasirayah	Thi-Qar
12781	Border Post—As Sulaymaniyah #03	Sulaymaniyah
20560	Border Post—As Sulaymaniyah #53	Sulaymaniyah
12787	Border Post—As Sulaymaniyah #29	Sulaymaniyah
20567	Border Post—As Sulaymaniyah #57	Sulaymaniyah
20568	Border Post—As Sulaymaniyah #65	Sulaymaniyah
20565	Border Post—As Sulaymaniyah #45	Sulaymaniyah
12840	Border Post—As Sulaymaniyah #20	Sulaymaniyah
12141	Border Post—Basrah #14, Al Mutawwi'ah	Basrah
12144	Border Post—Basrah #12, Kut Al Bandar	Basrah
12801	Border Post—As Sulaymaniyah #10	Sulaymaniyah
12145	Border Post—Basrah #11, Khut Abu Ika Reno	Basrah
12842	Border Post—As Sulaymaniyah #21	Sulaymaniyah
12161	Border Post—Basrah #04, Kut Ubayd	Basrah
20569	Border Post—As Sulaymaniyah #64, Sele	Sulaymaniyah
12802	Border Post—As Sulaymaniyah #11	Sulaymaniyah
1270	Al Diwaniyah Maternity & Children's Hospital	Qadissiya
17783	Basrah Village Roads—Segment 2 Talha (3.5 km)	Basrah
12800	Border Post—As Sulaymaniyah #9	Sulaymaniyah
12856	Border Post—As Sulaymaniyah #24	Sulaymaniyah
12142	Border Post—Basrah #13, Anajin E Divan	Basrah

THE 55 PROJECTS SURVEYED, ANALYZED, AND REPORTED PREVIOUS QUARTER

PCO PROJECT NUMBER	PROJECT NAME	GOVERNORATE
12149	Border Post—Basrah #10, Ras Al Bishah	Basrah
11897	Clinic in Najaf—Hai Kinda	Najaf
19217	Police Station—Checkpoint, Tampa, Jackson, D405	Thi-Qar
20347	Police Station—TSU Barracks, Phase I-D414	Thi-Qar
18243	Police Station—Al Huwayr, Al Madinah, B044	Basrah
20333	Police Station—Al Nassiriyah, Anti-Crime IPA, D156	Thi-Qar
19222	Police Station—Checkpoint, Nasir, D411	Thi-Qar
18346	Police Station—Diwaniya, Traffic Police, Q066	Qadissiya
19114	Police Station—Al Nassiriyah, Police Intelligence, D145	Thi-Qar
19221	Police Station—Checkpoint, Nassiriyah Prison, D410	Thi-Qar
12137	Border Post—Basrah #17, Al Haddidayah	Basrah
18241	Police Station—Al Midaina, B029	Basrah
19480	Police Station—Al Quibla, B043	Basrah
18263	Police Station—Al Zubayr, B038	Basrah
21251	Basrah Railway Station Rehabilitation	Basrah
11866	Clinic in Basrah—Hai Al Hussein	Basrah
19223	Police Station—Checkpoint, Fajr, D412	Thi-Qar
18248	Police Station—Al Qurnah, Police Station, B024	Basrah
12138	Border Post—Basrah #16, Kushk	Basrah
18268	Police Station—Al Faw, B033	Basrah
18223	Police Station—Abu-Al-Khasib, B032	Basrah
18273	Police Station—Safwan, B040	Basrah
20562	Border Post—As Sulaymaniyah #39, Awakurti	Sulaymaniyah

TABLE 3-6

Ground Project Surveys

SIGIR-PA-06-052

From November 19, 2005, to February 21, 2006, SIGIR conducted 41 limited on-site inspections. Most were in the Facilities and Transportation sector, including border control, education, medical, and public-safety facilities, roads, and railways. One inspection focused on a substation facility completed in the Electrical Sector. The overall objectives of these limited on-site inspections were to provide summary information on overall project progress and to identify any deviations from contract requirements.

SIGIR QC and QA teams produced and

forwarded a brief summary report to a SIGIR engineer/auditor team for review. The review of those reports, as well as contracting documents, provided the basis for the conclusions presented in the summary report, SIGIR-PA-06-052.

Location coordinates. At each site, SIGIR determined the coordinates of the project and compared them with the project locations submitted by GRD-PCO. Although the survey project locations were substantially more accurate than those presented in the previous SIGIR ground survey report, the grid coordinates provided by GRD-PCO were not always accurate. Of the 41 project sites:



Exterior view of border fort

- 35 were within 300 meters of the GRD-PCO locations.
- 2 were 1–3 km from the GRD-PCO locations.
- 4 were 3 km from the GRD-PCO locations.

Border Posts. SIGIR conducted ground project surveys of 21 border forts along the Iraq-Iran border. Twelve of the border forts were constructed through a single contract; nine were through another contract.

Contract requirements for 12 of the 21 border forts were to include an exterior compound wall with vehicle gate, four elevated guard posts, perimeter lighting, one operations building with three offices, secured arms room, communications room, toilet/shower room, kitchen/dining area, electrical generators,

water storage, and septic system. At the time of the ground survey, all 12 were complete or near complete and occupied by Iraqi border patrol personnel. However, only one of the 12 border forts had perimeter security systems, gates, berms, or walls installed.

Most of the border forts had difficult access roads, especially during rain or snow. Many sites lacked retaining walls to prevent degradation of the embankments created by site leveling. The ground survey teams noted numerous cracks in the building foundations, exterior walls, and interior walls. Cracks appear to be signs of differential settling of the foundation systems, which could create structural integrity problems. In addition, signs of down-gradient slope movement were observed, caused by the lack of retaining walls.



Crack in overhang of border post



Sewer outfall behind border post at MNSTC-I border post

In discussions with local border post police personnel, SIGIR found that the day-to-day users of the facility were unaware of a plan for maintenance and logistical support. In addition, they received little, if any, training on maintaining the generator and septic systems. Water delivery and other essential logistical requirements were lacking at most of the border posts. Reports claim that because water is scarce, personnel are reportedly not authorized to use the shower facilities during their 15-day shifts.

SIGIR requested copies of contract documentation for the remaining nine border forts included in the survey. MNSTC-I was unable to identify or locate the contracts for these projects. As a result, SIGIR was unable to determine the project objectives, scope of work, or design requirements.

The construction of all nine border forts was of extremely poor quality, and eight of

the nine showed no signs of any recent maintenance. Water was normally obtained from springs with questionable water quality, and filtration for the water was not available on-site. Septic systems were full, overflowing, or not operational. Personnel at the border forts were unaware of a plan for emptying the septic tanks. Although small generators were located on-site, fuel storage was not available. Several generators were not operational. Electricity and plumbing systems were consistently either not operational or needed repairs. SIGIR will evaluate these projects further.

Medical Facilities. SIGIR conducted limited on-site inspections of four medical facility projects in Najaf: two teaching hospital projects at the same location, one maternity and pediatric hospital project, and one clinic. The overall objectives of the maternity and pediatric hospital project were to repair, replace, or provide new prioritized building systems and



Front exterior of border post



Ceiling damage caused by water leaks at teaching hospital (Phase I)

to provide new authorized equipment. The overall objective of the clinic project was to provide for the design and construction of a standard, model health care center.

At the time of the SIGIR site visits, renovation was ongoing at both hospitals. The maternity and pediatric hospital noted no significant deficiencies. The teaching hospital had two projects through different contractors: Phase I and Phase II.

The ground project survey of work on the Phase I project noted numerous discrepancies:

- Suspending ceilings showed signs of water damage.
- Standing water from pipe leaks was observed adjacent to the exterior.
- Painted walls were blistering, possibly because of improper preparation or low-quality paint.

- Water pipes in the basement were leaking, causing water to accumulate on the concrete floor.
- Bathrooms showed signs of water leakage and tile damage.
- Low-quality interior doors and locks were used.

Hospital staff told SIGIR that the hospital's engineering team and the contractor had many disagreements about the quality of work performed. The ground project survey of the Phase II project work noted no deficiencies, and the quality of work was reported to be better than the previous contractor's.

New construction was in progress at the one primary health care center where limited on-site inspections were conducted. Structural concrete beams, columns, and slabs were com-

plete, and electrical and mechanical systems were being installed. Based on the review of the project surveys, SIGIR noted no significant deficiencies.

Electrical Substation. SIGIR conducted a limited on-site inspection of one electrical substation. GRD-PCO was unable to provide the task order associated with the project; therefore, SIGIR could not determine the project objective, statement of work, design, and specifications for the project. The ground survey team verified construction of the substation building, sidewalks, perimeter security and guard house, entrance gate, and generator shed. Two exterior transformers were observed mounted on concrete pads, and switchgears were observed inside the main building. Air-conditioning compressor units were mounted on the roof of the main building, and exterior light poles were located throughout the facility. No discrepancies were reported at this location.

Public Safety Facilities. SIGIR conducted limited on-site inspections of 13 public safety projects—12 police stations and one police checkpoint facility. The projects were or will be completed under various contracts awarded to Iraqi contractors. The overall objective for the police station projects was to renovate the facilities or construct new facilities.

The scope of work (SOW) for the facilities required new construction or renovation of buildings and facilities located on an existing or new site. The construction included a masonry security wall around the compound, berms, vehicle and personnel gates, guard tow-

ers, driveways and a parking area, sidewalks, plumbing, electrical and mechanical work, roof, ceiling, door, windows, walls, floors, and interior and exterior painting, as well as the purchase and installation of a diesel-powered back-up generator.

SIGIR observed completed or ongoing renovation and new construction work at all of the locations surveyed. SIGIR determined that the quality of electrical, plumbing, and finishing work at most projects surveyed was deficient. Also, many facilities had severe cracks in the exterior walls, probably from differential settling of the foundations.

Transportation Projects. SIGIR conducted limited on-site inspections of two transportation projects: one road construction project in Basrah and one railway station rehabilitation in Thi-Qar.

The overall objective of the road construction project was to construct 3.3 kilometers of paved, rural village roads in the governorate of Basrah. At the project location, the survey team verified that road construction was in progress. Installation of the sub-base and asphalt surface appeared to be consistent with the design requirements. Additional road surface and shoulder work was still required at the time of the visit. SIGIR did not note any major discrepancies. SIGIR noted that the villagers in the area are “very appreciative for the efforts, because it made a big impact on their daily life after it was paved.”

The Thi-Qar Railway Station renovation project was in progress at the time of the limited on-site inspection. SIGIR observed

interior renovation, including ceiling replacement, installation of electrical lights and wiring, painting of interior walls, and replacement of doors. The exterior renovation included replacing brickwork and installing security lighting. SIGIR did not note any major discrepancies. The railway station manager stated that the only defects were delays and work stoppages by the contractor.

Aerial Project Survey Program

For the past three quarters, the SIGIR Satellite Imagery Group has contributed to the SIGIR mission by conducting aerial assessments

of U.S.-funded reconstruction project sites throughout Iraq. SIGIR provides the information and analyses to the project assessment teams in Iraq to help them evaluate project sites that are inaccessible because of security concerns or because they are remotely located. Based in Arlington, Virginia, the Satellite Imagery Group also verifies project locations and provides follow-up information on reconstruction sites previously evaluated in SIGIR's limited on-site inspections. SIGIR shares the information obtained through aerial assessments with the responsible U.S. government contracting officials in Iraq.

Corner guard tower with perimeter wall of police station



NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY SUPPORT

This quarter, SIGIR imagery analysts have been working with the National Geospatial-Intelligence Agency (NGA) to provide imagery analysis of Iraqi reconstruction projects. To date, this continuing relationship has resulted in analysis of 51 sites and 5 road segments. This quarter, 27 project sites were completed—3 analyses were extremely time-sensitive. NGA's quick turnaround and assistance proved essential in efficiently carrying out SIGIR's mission in Iraq. These are some of NGA's notable findings provided to SIGIR this quarter:

- 20 sites appeared to be completed.
- Two border posts were completed but appeared to be much smaller than a typical border fort.
- Two sites could not be identified because of poor geo-coordinates and lack of project information.
- Two clinics were still under construction.
- One clinic showed no evidence of new construction.

SIGIR and NGA's partnership leverages greater resources to meet mission requirements. NGA's assistance increases the number of projects that can be reviewed and helps SIGIR provide a more accurate picture of Iraq's reconstruction progress.

SIGIR IMAGERY GROUP ANALYSIS

This quarter, SIGIR imagery analysts completed 14 imagery assessments and created 33 imagery products using commercial satel-

lite imagery. This imagery has been used to provide visual assessments of progress at construction sites. SIGIR shares the imagery products with government contracting agencies to update their project information and to identify any obvious deficiencies. SIGIR assessed and reviewed these sites during the reporting period:

Imagery Assessments

- Six police stations
- Five border posts
- Two clinics
- One electrical substation

Imagery Products

- Ten border posts
- Eight police stations
- Three hospitals/health clinics
- Three building sites
- Two railway stations
- Two prisons
- One electrical substation
- One landfill site
- One warehouse
- One oil refinery
- One courthouse

SIGIR Assessments

This quarter, SIGIR completed 14 imagery assessments based on satellite imagery and limited on-site inspection reports. These assessments have been helpful in reviewing the accuracy of inspection reports, providing a visual assessment and verification of project progress. Geo-coordinates from limited



Imagery taken on December 9, 2005, shows an overview of the Bargurd border fort—Visual assessment confirms the geo-coordinate location of the Bargurd border post. A review of imagery shows what appears to be a completed and functional border post. Visible structures include border-post main building, storage building, covered parking, and generator shed. Visible problems include the lack of perimeter wall and retaining walls, which would prevent erosion and avalanche damage during snow and rain. Poor location makes this site difficult for defense and for monitoring border activities. Imagery supports the inspection team's report finding.



Imagery taken between November 3, 2005, and May 15, 2006, shows progress made during construction of an Iraqi courthouse. There are no visible signs that this project does not or will not meet contract requirements.

AERIAL IMAGERY ASSESSMENTS

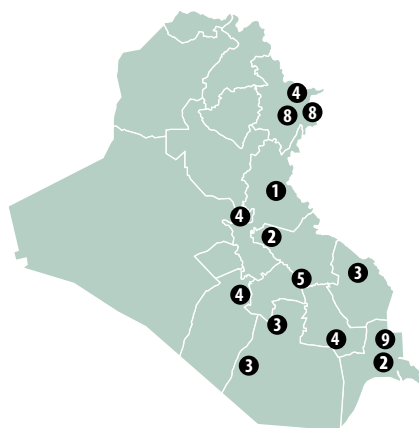


Figure 3-3
**APPROXIMATE LOCATIONS OF
 AERIAL IMAGERY ASSESSMENTS
 (2ND QUARTER 2006)**

on-site inspection reports are used to locate imagery of each project site. Information on project progress reported in the limited on-site inspection reports is compared to the satellite imagery to verify accuracy and to ensure that projects are being completed to project specifications.

These are some of the notable findings from imagery assessments this quarter:

- Seven sites appeared to be functional and to meet project requirements.
- Two border forts did not have perimeter walls.
- One border fort did not have a perimeter wall or retaining walls that would provide protection against soil erosion and avalanches during rain and snow.
- One border fort did not appear to meet standard design requirements and lacked a retaining wall.
- One border fort was located in a poor strategic position, with a poor view of the border and a less defensible position. Also, it did not have a perimeter wall.
- One site was still under construction.
- One site could not be positively identified based on available imagery.

These findings are provided to the responsible government agencies in Iraq who conduct further reviews of project contract status and plan follow-up project assessments for future quarters.

Imagery Products and Support

This quarter, SIGIR has created imagery products of 33 sites throughout Iraq. The imagery is used to create imagery assessments, build a visual record of project sites, and provide imagery to support SIGIR's mission. Any visual deficiencies are reported when the imagery is reviewed.

In partnership with the National Geospatial-Intelligence Agency and the National Ground Intelligence Agency over the past three quarters, SIGIR imagery analysis has resulted in the completion of 172 cumulative satellite imagery assessments and products—60 completed this quarter.